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ABSTRACT

The "preplay" technique, an advance organizer summarizing important plot events before sections of a story, is examined for its effectiveness in facilitating children's selective attention to and comprehension of televised stories. One hundred and sixty first through fourth grade children, equally distributed by grade and sex, were randomly selected from three midwestern schools. Pairs of same-sex children viewed a prosocial cartoon in one of five viewing conditions. In the four treatment conditions, the type of preplay varied by visual-nonvisual and concrete/inferential narration. The fifth condition was a control with no preplays. After each subject's visual attention to the television screen was scored, they were asked to order four picture sets taken from the television program to assess temporal integration of the story. In addition, children were asked to answer 42 multiple-choice items intended to assess their recognition of inferential, central-concrete, and incidental content. As predicted, children attended longer to visual than nonvisual preplays. Boys and younger children were especially attentive to visual and concrete preplays, while girls and older children were more attentive to inferential preplays. Also, as predicted, children who saw visual preplays correctly sequenced more pictures than children who saw nonvisual preplays and they recognized more incidental content. (MP)

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Multimedia Uses in Organizing Learning

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Multimedia Uses in Organizing Learning

Knowing what is to follow may facilitate learning by providing the learner with a clear organization and knowledge framework for integrating new information. Improved learning may occur for two reasons: (1) appropriate knowledge bases stored in memory may be called forth to facilitate incorporation of new information; and (2) new information can be anchored into existing memory structures, which should help protect that information from being forgotten (Ausubel, 1960).

You have just heard an advance organizer: an introductory passage that provides a conceptual framework for a future learning task (Ausubel, 1960). This introductory passage is presented at a higher level of abstraction, generality, and inclusion than the actual learning material. Although advance organizers can facilitate learning and retention, many studies do not report such facilitative effects, particularly studies with children. Perhaps the mixed results about the effectiveness of advance organizers for children is partly because presentation at a high level of abstraction is often above their level of comprehension.

Comprehension difficulties have also been documented in young children's understanding of televised information. Mature comprehension of a televised story requires a viewer to: (1) separate central, plot-relevant from incidental, peripheral content; (2) sequence central information according to a scheme; and (3) make inferences about implicit content such as character emotions.

Although a child's cognitive level cannot easily be changed to improve information processing, the structural codes or formal features of the television medium can supplement viewer skills. In particular, visual features can

structure and order events into a scheme while verbal features can supply inferences through story narration. The purpose here was to examine production techniques that might benefit children's comprehension of a televised story. The technique used was the "preplay," an advance organizer summarizing important plot events before sections of the story.

The idea of preplays was born, oddly enough, while I viewed a Super Bowl game on television. As I watched slow motion "replays" of important football plays, it occurred to me that such rehearsal might benefit young children's comprehension. Of course, replays go backwards instead of forwards because the game is in progress. Programs which already have an outcome do not have this limitation. In fact, if you show children critical events before they occur, a prior structure may be created to incorporate the coming story events. The research in the area of advance organizers suggested such a facilitative effect. By presenting critical story content before a program, a preplay could aid the viewer in selecting central information--an activity that Collins targeted as a prerequisite skill for understanding television content.

The second viewer skill which Collins stated as necessary for comprehension was linking important events closely in time. Thus, in the preplay, important events were extracted and placed in proximity, thereby increasing the probability that children would perceive those events as related. Verbal labeling supplied the third viewer activity: that is, supplying the inferences which are necessary for children to understand story messages.

To present the preplay format, I created a fantasy character, Madame Sees-All-Knows-All, a gypsy who could see the future cartoon events through her crystal ball. She replaced Bill Cosby as narrator in an episode of Fat Albert and the Cosby Kids which was about divorce.

Preplays then, provided an overall plot structure to facilitate children's selective attention to, and comprehension of, plot-relevant televised content. To determine features which were most effective as aids to comprehension, preplays varied on two orthogonal dimension: (1) presence or absence of visuals; and (2) concrete or inferential story narration. Visual preplays were expected to improve temporal integration, encoding, and retrieval of story events because a visual, structural overview was provided, which may be a developmentally appropriate mode for young children to represent content. Inferential narration in preplays was expected to improve comprehension of inferential, implicit content, while concrete narration was expected to improve comprehension of central-concrete content. Both attention and comprehension were assessed as indices of cognitive processing.

One hundred sixty, first through fourth grade children, equally distributed by grade and sex, were randomly selected from three midwestern schools. Pairs of same-sex children viewed a prosocial cartoon in one of five viewing conditions. In the four treatment conditions, the type of preplay varied by visual-nonvisual presentation and concrete/inferential narration. Three preplays were placed within the cartoon. The fifth condition was a control with no preplays.

Each child's visual attention to the television screen was scored continuously by one of two observers behind a one-way mirror. After viewing, the child ordered four picture sets taken from the television program to assess temporal integration of the story, and then answered 42 multiple-choice items to assess recognition of inferential, central-concrete, and incidental content.

Duration of attention scores, the percent of time each child looked at the television screen, was computed separately to each of the three preplays and three program segments. Because viewing patterns were not independent, pairs was the unit of analysis in a 5 (condition) by 2 (sex) by 4 (grade) analysis of variance with attention to each preplay and program segment as the dependent variable.

As predicted, children attended longer to visual than nonvisual preplays. Boys and younger children were especially attentive to visual and concrete preplays, while girls and older children were more attentive to inferential preplays. For fourth graders in inferential conditions, high levels of attention to the first preplay generated increased attention to the program.

Comprehension scores were calculated for picture sequencing and recognition. For each picture sequencing set, a rank-order correlation was computed between the correct picture sequence and each child's picture order. For multiple-choice scores, the correct raw number was computed for recognition of inferential, central-concrete, and incidental content. Pairs was again the unit of analysis in a 5 (condition) by 2 (sex) by 4 (grade) analysis of variance with each comprehension category as the dependent variable.

As predicted, children who saw visual preplays correctly sequenced more pictures than children who saw nonvisual preplays; in addition, they recognized more incidental content. As picture sequencing and incidental content were often presented visually, not surprisingly, comprehension of this information was associated with visual attention to preplays and program segments. Children in inferential conditions recognized more inferential content than did those in concrete conditions, but visual attention was not related to inferential comprehension, suggesting that children need only listen to verbally-presented information.

In general, girls and older children temporally integrated events and recognized central-concrete and inferential items better than boys and younger children, who were more likely to recognize incidental items. Thus, girls and older children were able to use preplays to structure information encoding and retrieval more than boys and younger children. Visual features in preplays were effective for picture sequencing, but unfortunately, visuals seemed to highlight incidental content to boys. The inferential narration seemed the key feature for improved comprehension, but the language had to be within the child's range of comprehension. Producers of children's television programs can utilize preplay formats to improve understanding of central plot information, but effectiveness, of course, remains limited by children's underlying cognitive skills.

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